

Date: Fri, 5 Aug 94 04:30:22 PDT  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Homebrew Digest V94 #224  
To: Ham-Homebrew

Ham-Homebrew Digest                      Fri, 5 Aug 94                      Volume 94 : Issue 224

Today's Topics:

                    2m mobil amplifier  
                    6m amplifier using vacuum tubes  
                    Does anyone have info on QEX? (2 msgs)  
                    Ferrite cores and beads  
                    Multiplexed microwave links (2 msgs)  
                    My el-cheapo VHF swr meter  
                    Need info on a RX-only ant tuner...  
                    Source for Crystals  
                    Tube 6 m Amp  
                    want plans for"interface for cw with PC" (2 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>  
Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Wed, 3 Aug 1994 16:57:10 GMT  
From: psinntp!sunsrvr6!jdc@uunet.uu.net  
Subject: 2m mobil amplifier  
To: ham-homebrew@ucsd.edu

In article <31hlq8\$5ld@eis.wfunet.wfu.edu>,  
Forrest T Charnock <charnoft@ac.wfu.edu> wrote:

> I'm thinking about building a small amplifier for a 2m HT to use  
> in my car. 30 or so watts.  
>  
> Anybody know where I could get some plans?  
>--

Try the ARRL Handbook. My 1974 copy has a 25 and 45 watt amp for 2-meters.

Strangely enough, older editions have more useful information. The new ones cover things that apply to every-ham, like 45 foot dish antennas mounted on navy surplus gun mounts. Or really useful things that can't be found anywhere else, like ASCII/Baudot tables and other newfangled computer stuff.

And then there's projects using parts cheaply and easily available in the 90's. Well, I'm off to the local Radio Shack for some dual-gate MOSFET's.

73...Jim

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Date: 4 Aug 1994 01:46:44 GMT  
From: ihnp4.ucsd.edu!munari.oz.au!metro!news.cs.su.oz.au!  
harbinger.cc.monash.edu.au!newsserver.trl.OZ.AU!pcies4.trl.OZ.AU!  
drew@network.ucsd.edu  
Subject: 6m amplifier using vacuum tubes  
To: ham-homebrew@ucsd.edu

In article <31nbc6\$4u1@news.ysu.edu> aq760@yfn.ysu.edu (Ben Slagle) writes:  
>From: aq760@yfn.ysu.edu (Ben Slagle)  
>Subject: 6m amplifier using vacuum tubes  
>Date: 3 Aug 1994 05:53:10 GMT  
>  
>I need a schematic for a small, vacuum tube 6m amplifier... I'd  
>like it to be in the area of 10 watts... nothing fancy, just a  
>n amplifier I can make for cheap. Thanks.

At first glance this looked like a fairly simple question. I've looked through all my books going right back to the 60's (these include RSGB, ARRL and Bill Orr's H'books, and Jessop's RSGB VHF/UHF H'book). There's not a lot of 50 MHz material at about the 10W power level using tubes is there? (it's all 500 W to 1 kW stuff).

However, my copy of the ARRL VHF H'book for 1972 has a circuit using a 6146 tube as part of a transverter project (page 131). Requires +600 V and -100 V supplies. Looks like it may do the job, as it can be adjusted for linear or class C operation.

73, Drew, VK3XU. Telecom Australia Research Laboratories.

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Date: 04 Aug 1994 17:10:52 GMT  
From: newshub.sdsu.edu!nic-nac.CSU.net!charnel.ecst.csuchico.edu!  
yeshua.marcam.com!zip.eecs.umich.edu!newsxfer.itd.umich.edu!isclient.merit.edu!  
msuinfo!netnews.upenn.edu!netnews.@@ihnp4.ucsd.edu  
Subject: Ferrite cores and beads  
To: ham-homebrew@ucsd.edu

I am working on a power/swr meter project and am in need of some ferrite beads (Amidon FB73-101) and ferrite cores (Amidon T50-3). I am unable to find a vendor for these. Newark, Active and Digikey don't seem to carry it (at least by Amidon) and I don't know the part numbers for other manufacturers.

--

Medical Image Processing Group		73 de Conway Yee, N2JWQ
411 Blockley Hall		EMAIL : yee@mipg.upenn.edu
423 Guardian Drive		TELEPHONE : 1 (215) 662-6780
Philadelphia, PA 19104-6021 (USA)		FAX : 1 (215) 898-9145

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Date: Thu, 4 Aug 1994 18:36:39 GMT  
From: ihnp4.ucsd.edu!news.service.uci.edu!ttinews!avatar!sorgatz@network.ucsd.edu  
Subject: Multiplexed microwave links  
To: ham-homebrew@ucsd.edu

In article <31omo9\$ju2@kira.cc.uakron.edu> kevin@marconi.w8upd.uakron.edu (Kevin C. Swanson) writes:

>Has anyone seen any cheap multiplex microwave link products. Our club is  
>trying to phase out the UHF links for our 2m repeater and we would rather  
>buy something with 3-6 audio channels at 900 or above. We have looked into  
>Mot. Starpoint 2000's, but they are too pricey, any suggestions??

>  
>Kevin  
>

Why not look into a pair of Advanced Receiver Research's 10GHz gunnplexer based transceivers? Their complete one-channel FM voice or cw units are priced at something near \$500, and if you wanted to do some board-level hacking yourself, you could build the modulator/demod-receiver and i.f. stages yourself - the basic gunnplexer with horn is about \$190 each... ..they also have units at 24 GHz and higher power (>10mW) units available.

I'd like to find an existing ATV interface for the gunnplexer myself...

-Avatar-> (aka: Erik K. Sorgatz) KB6LUY +-----+  
TTI(es@soldev.tti.com)or: sorgatz@avatar.tti.com \*Government produces NOTHING! \*  
3100 Ocean Park Blvd. Santa Monica, CA 90405 +-----+  
(OPINIONS EXPRESSED DO NOT REFLECT THE VIEWS OF CITICORP OR ITS MANAGEMENT!)

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Date: 3 Aug 1994 18:13:29 GMT  
From: lll-winken.llnl.gov!overload.lbl.gov!agate!howland.reston.ans.net!  
europa.eng.gtefsd.com!swiss.ans.net!malgudi.oar.net!kira.cc.uakron.edu!  
marconi.w8upd.uakron.edu!kevin@ames.arpa  
Subject: Multiplexed microwave links  
To: ham-homebrew@ucsd.edu

Has anyone seen any cheap multiplex microwave link products. Our club is trying to phase out the UHF links for our 2m repeater and we would rather buy something with 3-6 audio channels at 900 or above. We have looked into Mot. Starpoint 2000's, but they are too pricey, any suggestions??

Kevin

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Date: 4 Aug 1994 00:38:14 GMT  
From: news.cerf.net!gopher.sdsc.edu!news.tc.cornell.edu!  
travelers.mail.cornell.edu!news.kei.com!eff!news.umbc.edu!europa.eng.gtefsd.com!  
howland.reston.ans.net!math.ohio-state.@@ihnp4.ucsd.edu  
Subject: My el-cheapo VHF swr meter  
To: ham-homebrew@ucsd.edu

In the recent past I posted a question - how do I make a cheap VHF swr meter? Well, I got lots of helpful replies (thanks to all!); most of these involved either 1) a PCB microstripline, or 2) the pickup loop under the coax trick. I started building no.2, but then...

Last weekend I was at the local ham radio emporium, when I espied a used RS swr meter, the real cheap one they sell for CB's. For \$9, I figured, it's at least good to strip the meter out of. So I take the thing home, and hook it up to my 2 meter HT and a precision 50 ohm coaxial termination. The thing says 1.1:1. Then I try a 100 ohm load - damn close to 2:1. It must be working! Next, I reverse the connections; not so good, around 1.7:1 with 50 ohms. Sensitivity: with my HT @ 146MHz and 1W output, I could peg the meter with the wiper on the CAL pot about 40% from the ground end. Not bad.

Taking the thing apart, I discover a PCB stripline with 2 pickup loops, and a pair of detector circuits. The reverse loop is terminated with a trimpot, but the forward loop ends in a fixed 100 ohm resistor. Time to re-engineer the thing. Here's how...

- 1) Add a 1K trimpot across the 100 ohm loop termination. 49 cents at RS. Just stick it on the foil side of the board. The actual loop impedance measures 86 ohms at null.
- 2) The forward detector circuit has a 270 ohm resistor between the diode and the FOR/REF switch, the reverse circuit does not. This is isolation for the "field strength meter" circuit. Add another resistor to make both sides the same - there are already pads on the board for this.
- 3) Cut out the two diodes for the "field strength meter" circuit. It doesn't work anyway, unless you clip-lead the thing to your antenna.
- 4) Check the forward drop of the two detector diodes - if they're too far apart, replace them with a matched pair of 1N34A's.
- 5) Null the loops with a \*good\* quality 50 ohm termination.

That's it. For less than 10 bucks I've got a pretty good 2 meter swr meter. Even if you buy one new for \$19.95, it's probably cheaper than anything else you'll find. Make sure you get the cheapo model, with the worthless field strength meter circuit; I have no idea what's inside the higher priced one. Mine is model 21-525B; except for cosmetic changes, I suspect the newer ones are the same.

It would be interesting to see if this thing works up at 440MHz, but I don't have any 70cm gear now. Any takers?

Now I can get on with building antennas, which is what I wanted to do in the first place. I'll let you know how the vertically polarized loop yagi turns out...

Steve N8KVV

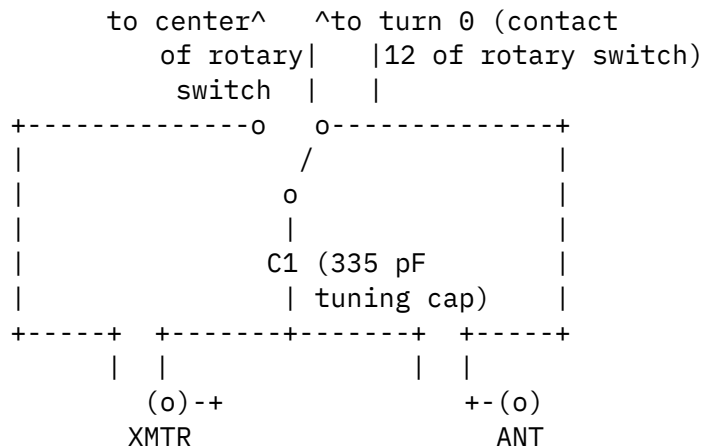
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Date: 4 Aug 94 14:08:02 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Need info on a RX-only ant tuner...  
To: ham-homebrew@ucsd.edu

There was an article on a QRP antenna tuner in the June 1992 Popular Electronics that should work for you. You'll need a 335 pF tuning capacitor, a 12-position rotary switch, a SPDT center-off toggle, a T130-6 toroid (yellow core), and some #24 enamel-coated wire. Wind 21 turns of the wire onto the toroid, making loops for taps at turns 1,3,5,7,9,11,13,15,17,and 19. Solder turn 21 to the first contact (assuming clockwise rotation) on the switch, turn 19 to the second contact, etc., until turn 0 is connected to contact 12 on the switch. Connect turn 0 to one contact of the SPDT toggle, and connect the center of the rotary switch to the other contact. Connect the 335 pF capacitor to the center contact of the toggle, and connect the other end of the

capacitor to circuit ground. Now connect the center pin of the transmitter connector to one contact of the toggle, and the antenna connector to the other. The switch lets you electrically reverse the tuner, and by putting the switch in its center position, the tuner is taken out of the circuit.

Here's a rough diagram (with the coil and rotary switch omitted):



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--
-----
ai351@leo.nmc.edu                                David Brodbeck
Amateur packet (AX.25):  N8SRE@wb4vva.#nemi.mi.usa.na
-----
```

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Date: Wed, 3 Aug 1994 15:04:08 GMT
From: agate!howland.reston.ans.net!math.ohio-state.edu!darwin.sura.net!
jabba.ess.harris.com!news.ess.harris.com!adm01%rfc.comm.harris.com!
gdian22@ames.arpa
Subject: Source for Crystals
To: ham-homebrew@ucsd.edu
```

Hello all -

About the 455khz crystals...

1. The circuit design really calls for resonators. I saw the symbol for xtal and took off shopping for the part. Turns out Digikey has a 455khz resonator, for about a buck each.
2. I received about 10 replies, 70% said to go the resonator route, the other 30% described various methods of obtaining 455khz by dividing higher freq xtals.

I replied via email to everyone I heard from... if I missed you, my apologies. I appreciate the help/info, I learned something new here. When I get the parts (probably next week) and get this project going, I'll report back as to it's operation.

73 for now. Gary N2JGU

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Date: 4 Aug 94 16:43:42 GMT  
From: news-mail-gateway@ucsd.edu  
Subject: Tube 6 m Amp  
To: ham-homebrew@ucsd.edu

There was no e-mail address for the person posting this inquiry, so I'll post it here. You can find a good 6146 design in the older ARRL Handbooks circa 1977. These are the old style from before they were 8" by 11". I believe that the design was either in the VHF section or the portable/emergency section. This design should also work with a 2E26 if you only want about 10 Watts. You could also use a 2N6084 power transistor for an inexpensive amp (this is about \$13 US for the transistor). There is a schematic for a 2m version class C on page 31-34 of 1985 ARRL Handbook using this transistor. You could scale the inductors and capacitors for use on 6m and add a bias circuit for class AB operation. This transistor can give about 40W of output with about 10db gain at 50MHz. Send me your e-mail address and I should be able to send a postscript file with a schematic in a week or so.

Ray  
WD5IFS  
mack@mails.imes.com

-----  
Date: 4 Aug 1994 03:26:35 GMT  
From: dog.ee.lbl.gov!agate!howland.reston.ans.net!usc!nic-nac.CSU.net!  
charnel.ecst.csuchico.edu!yeshua.marcam.com!news.kei.com!ssd.intel.com!chnews!  
scorpion.ch.intel.com!cmoore@ihnp4.ucsd.edu  
Subject: want plans for"interface for cw with PC"  
To: ham-homebrew@ucsd.edu

In article <CtzI9D.Gn9@ucdavis.edu>, <szhall@chip.ucdavis.edu> wrote:  
>I understand there are some very simple plans for making an interface so  
>you can send CW with your PC--Do you know where I can get the plans or a  
>kit? Thanks for your help..73es..Jeff  
>

Hi Jeff, The SuperMorse manual tells you how to do it with SuperMorse. On



most transceivers, all it takes is an NPN transistor and a resistor. But the optoisolator suggested by SuperMorse will keep you out of trouble.

With tongue firmly planted in cheek I say, please note that MCP's (Morse Code Purists) will disown you for generating CW with a machine 'cuz it wusn't dun thut way in thu 20's... glad I'm not thut old. :-)

Good luck and 73, Cecil, KG7BK, 00TC (Not speaking for Intel)

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Date: Thu, 4 Aug 1994 00:20:01 GMT  
From: news.cerf.net!gopher.sdsc.edu!news.tc.cornell.edu!  
travelers.mail.cornell.edu!news.kei.com!eff!news.umbc.edu!europa.eng.gtefsd.com!  
library.ucla.edu!news.ucdavis.edu!chip.@ihnp4.ucsd.edu  
Subject: want plans for"interface for cw with PC"  
To: ham-homebrew@ucsd.edu

I understand there are some very simple plans for making an interface so you can send CW with your PC--Do you know where I can get the plans or a kit? Thanks for your help..73es..Jeff

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Date: Thu, 4 Aug 1994 22:54:42 GMT  
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!usc!news.service.uci.edu!  
ttinews!avatar!sorgatz@network.ucsd.edu  
To: ham-homebrew@ucsd.edu

References <YEE.94Jul25185334@mipgsun.mipg.upenn.edu>, <LTL9Pc4w165w@opus-ovh.spk.wa.us>, <31pa2b\$bis@apple.com>r  
Subject : Re: Does anyone have info on QEX?

In article <31pa2b\$bis@apple.com> kchen@apple.com (Kok Chen) writes:  
>bmark@opus-ovh.spk.wa.us (Brian) writes:  
>  
>>yee@mipg.upenn.edu (Conway Yee) writes:  
>  
>>> If QEX is truly only 24 pgs, there is barely an excuse NOT to have it  
>>> in QST. A typical QST is circa 240 pgs long. What is an extra 24  
>>> pgs?  
>  
>>A quibble: It's nominally 32 pages long.  
>  
>  
>A quibble-quibble: about 4 of the internal pages are advertisements which  
>seem to already be in QST. :-)  
>

